

EXPLORING THE DETERMINANTS OF FAN PAGE MEMBERS' WILLINGNESS TOWARD PARTICIPATING IN AN ONLINE GROUP BUYING ON FACEBOOK: AN INFORMATION ADOPTION MODEL PERSPECTIVE

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ABSTRACT

Recently, online group buying has become an important channel for consumers to purchase commodities. The development of its business models is flourishing. Because fan page of Facebook is easy to aggregate consumers who have common interests and needs, many individuals have used fan page as a place to initiate an online group buying. Through long-term sharing their opinions and reviews of some products they have used and interacting with fan page members, they can attract a lot of followers to participate in their initiated online group buying on fan page. Clearly, fan page group buying (FPGB) has become a new business model for individuals to initiate an online group buying. However, rare researches target on understanding why consumers on fan page would participate in FPGB. Based on the information adoption model (IAM), the aim of this study was to explore the factors that may influence fan page members' willingness to participate in FPGB. Moreover, because the concept of critical mass is an essential factor for online group buying, this study integrated the construct of critical mass into IAM. The research results found that the perception of information quality that was posted by FPGB operators and the credibility of FPGB operators would significantly increase fan page members' perception of information usefulness. Moreover, the perception of information usefulness was also associated with fan page members' perception of critical mass. Finally, fan page members' perception of information usefulness and critical mass would promote their willingness toward participating in FPGB. Several suggestions for FPGB operators were also proposed by the discussion of practical implications.

KEYWORDS: Online Group Buying, Fan Pages, Information Adoption Model, Critical Mass

INTRODUCTION

According to the report, "Facebook users in Taiwan," which was released by the market research company Taylor Nelson Sofres (TNS) in 2014, indicated that Facebook is the most popular social media in Taiwan and plays an important role in influencing Internet users' shopping decisions. The same report also showed that 50% of the Facebook users have the experiences in searching, purchasing, and selling products on Facebook[1]. A fan page provides an online place in which users can sell or purchase goods on Facebook in an easy and convenient way. According to the official Facebook, the aim of fan page is to provide a channel which helps the communication and interaction between organizations, corporations, celebrities, and brands and their fans. Any Facebook user can press "Like" button to become a member of a specific fan page and keep in touch with that page.

With the growing popularity of fan pages, many operators of fan pages begin initiating an online group buying on their fan pages. Liu et al. [2] pointed out that accumulated needs and high discount rates are two core elements of a group buying. A group buying typically starts with a group of people who need to buy the same products. As a collective group of

buyers, they can raise their power of negotiation and get a better price with sellers. Most fan page operators would serve as the first person who has the experiences in using the product and share their experiences with their members on fan pages. After reading the product using information provided by the operator, the members of fan page would then decide whether to participate in the group buying or not. However, the success of group buying is dependent on the number of participants. In other words, a successful group buying must have a certain number of participants which meet the requirement for discount price. Therefore, exploring the factors that influence fan page members willingness toward participating in a group buying is an important topic that cannot be ignored.

In the case of fan pages, Facebook users can show their interesting in a brand or a lifestyle by clicking the “Like” button on a fan page, which indicates that they agree to receive the posts shared by the fan page on their profile[3]. Similarly, in a group buying fan page situation, Facebook users can “like” a fan page to become a fan of it and follow the latest posts on that page. Meanwhile, through constantly updating information and continuously interacting with consumers, operators can enhance the members’ trust of them, which in turn enhance the fans’ willingness to join in a group buying. Past studies have proved that when consumers perceive that other consumers also participate in a certain network or system, meaning when consumers discern there is a significant number of fellow consumers, they might be more motivated to be part of the network or system[4]. Therefore, in a group buying fan page (FPGB), fans may have higher willingness toward participating in a group buying due to the number of other members’ join decision. Hence, the information itself published on the fan page, the perception of fan page operator, and the number of members who participant in a group buying are important factors influencing individuals’ decision making to join in a group buying.

Sussman and Siegal [5] have proposed the Information Adoption Model (IAM) which is mainly used to examine the process of individuals’ information adoption. IAM posts that information quality and source credibility are the two critical factors that influence the decision making process of individuals’ information adoption. In the FPGB situation, the processes in which members receive the information posted on the fan page and then decide whether they want to participate in the group buying or not can be seen as an information adoption. Therefore, IAM is an appropriate theory to explore what influence fans’ decision to participate in a group buying. The information itself posted on the FPGB can be evaluated as the level of information quality which may influence fans’ willingness to join in the group buying. In other words, the more detailed information of the product that posted by a fan page operator, the more power of persuasion that would enhance the perception of usefulness, which in turn promotes fans’ willingness toward participating in the group buying.

Furthermore, the trust level of fan page operators perceived by members can be considered the source credibility mentioned in IAM, which would determine fans’ intention to join in the group buying. This means that fans may generate the perception of trust of fan page operators by long-term following and participating in the group buying of a FPGB. They thus believe that the product of group buying that initiated on the FPGB has been tested and evaluated by the operator and has the worthy of purchase. As the result, fans are more likely to trust the product for which the operator launches the group buying is beneficial to them. They thus have higher intention to participate in the group buying. In addition, when many members of the FPGB think the product information posted on the page is comprehensive and precise, they are more motivated to participate in the group buying. The main reason is when many members express their intention to join in a group buying, individuals are more likely to recognize the popularity of the group buying and then are motivated to be part of the event. This indicates that the perception of critical mass that other members’ intention toward participating in FPGB

need to be highlighted when investigating the determinants of decision making process of FPGB. This study therefore argues that information quality and source credibility may motivate members to participate in the FPGB, as well as their perception of critical mass.

Past studies regarding group buying tend to focus on group buying events initiated by a third party, such as Groupon. Song [6] proposed that Groupon is a B2C group buying platform, which primarily serves middle- and small-scale business. It offers companies a platform to advertise their discount products so as to draw more attention from consumers. Meanwhile, Groupon itself can attract more attention from consumers. Most previous studies related to group buying focus on the impact of risk and trust on the intention to join in a group buying, such as risk of credit card transaction, risk of a product, or consumers' trust on a group buying platform. Many studies have manifested that risk and trust are important factors affecting the process of group buying. Few studies adopt the perspective of information adoption to explore the impact of information adoption on the intention to join in a group buying.

Unlike the previous researches, this study use group buying initiated on personal fan page operators on their pages as research field. Based on the IAM and adds the concept of critical mass, the aim of this study was to propose a research model to investigate the factors influencing FPGB members' decision making process to participate in a group buying. We explore how information quality and source credibility influence the perception of usefulness and the critical mass of FPGB members, as well as the association between both the perception of information usefulness and the critical mass and the intention to participate in group buying on FPGB. The findings of this research can be used as references for FPGB operators and service providers of FPGBs.

INFORMATION ADOPTION MODEL

Sussman and Siegal [5] proposed the IAM based on the Elaboration Likelihood Model (ELM). IAM mainly used to explore how consumers are influenced by receiving information and adopt that information in a computer-mediated communication (CMC). According to the ELM, information generates influences via two extreme routes: the central route and the peripheral route[5, 7]. The central route means consumers have a higher degree of involvement in the product and carefully analyze the product information[8]. On the opposite, the peripheral route means consumers do not carefully analyze the product information; instead, they use simple cues as the evaluations to make decision[8].

Consumers usually evaluate and analyze the product related information before they purchase the product, which can be regarded as the influencing process of central route. When the product information can successfully persuade the consumers, consumers are more likely to have a positive attitude toward the product. To what degree the persuasion of product information is referred to as information quality. Conversely, if consumers do not have intention to or lack enough ability to analyze the product information they received, peripheral routes would play a more influential role. As a result, other factors such as the endorser of the product and someone that consumers trust recommends the product would have more influence on their decision making process. These factors can be seen as the peripheral cues.

Sussman and Siegal [5] mentioned that in a CMC environment, individuals' own elaboration model may affect the adoption of information. Information quality and sources credibility are the most two crucial factors in the decision making process. Information quality refers to the content of the information is powerfully persuasive and can thus affect consumers' adoption of the information. Sources credibility means that rather than information itself but the source of the information would influence the perception of usefulness in decision making process.

This study aims to explore how personal FPGB operators can increase fans' willingness to participate in a group buying by posting information related to products and their relationships with members. In this type of group buying model, the posts quality about the product shared by operators and the level of trustworthiness of operators are particularly important. Therefore, this study uses IAM as the theoretical basis. We regarded the quality of product information posted by FPGB operators as information quality and the trustworthy level as source credibility. The current study explored the impact of posts itself on FPGBs and the characteristic of FPGB operators on members' perception of information usefulness and further affect their intention to participate in a group buying.

RESEARCH MODEL

Based on the IAM and integrated the concept of critical mass, this study proposed a research model to explore the information quality posted by FPGB operators and the degree of trustworthiness of FPGB operators influence individuals' perception of the information usefulness and critical mass. Also, how the information usefulness and the critical mass affect members' willingness to join in a group buying was examined. The research model is illustrated in Figure 1. The hypotheses development was then explained.

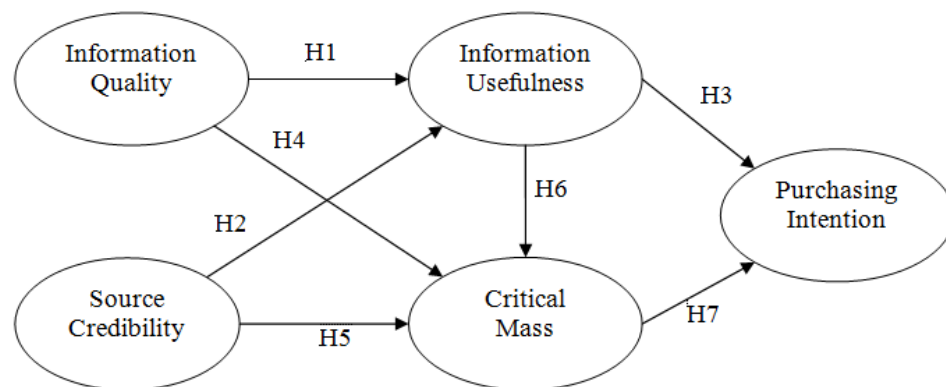


Figure1: Research Model

Information Quality and Source Credibility

According to the IAM, information quality and source credibility are two crucial factors that influence the perception of information usefulness. Prior scholars have mentioned that in a CMC environment, consumers' decision making might be influenced by the information quality they received[9, 10]. Jeong and Lambert [11] posted that the information quality of a creation company's webpage might help increase consumers' positive evaluation of the company. It is an important factor that helps the establishment and the maintenance of relationships between companies and customers. In other words, how customers view the information quality of a company's published webpage is an important factor affecting their buying decisions making. In addition, previous studies have proved that the information quality is one of the crucial factors that affect the perception of information usefulness. Higher information quality lead to the increase in the perception of usefulness[5]. In the FPGB setting, the operators often test the product, share their experiences of using the product, and post information to inform members before initiating the group buying. The operators tend to clearly compare the effects before and after the use of the product in their posts and show the entire process of using the product. Comparing to general advertisements, posts on FPGBs introduce more clear and comprehensive information about the product that meet consumers' needs. Therefore, members may evaluate that the information posted on FPGB has higher reference value than traditional advertisement and have higher perception of usefulness of the posts.

In addition to information quality, the IAM points out that source credibility is another important factor determining the information usefulness. Source credibility refers to the degree to which information receivers trust information senders[12]. People rely on the trustworthiness of information source to evaluate if the information deserves their trust[13]. In the past, the credibility has been proved as an important factor that affects individuals' perception of usefulness of information they received[5, 13]. On FPGBs, when members have a higher trust on operators, they would generate a higher degree of trust on the sources of information posted on the page. They are also more likely to be persuaded by the information and raise their perception of the usefulness of the posts. Moreover, according to the IAM, the perception of the usefulness of information would affect users' adoption intention of information[5]. Therefore, when fans on the fan page are aware of the information usefulness of the group buying product, they are more likely to participate in the group buying. This study proposes the following hypotheses:

H1: The higher information quality of posts on FPGB the members perceived, the higher perception of information usefulness they would have.

H2: The higher perception of source credibility of an FPGB operator the members perceived, the higher perception of information usefulness they would have.

H3: The higher perception of information usefulness on FPGB the members perceived, the higher willingness toward participating in the group buying they would have.

Critical Mass

The critical mass refers to the certain minimum number of users who adopt the new innovation, and when the minimum point is achieved, the development of the innovation will rapidly grow[4, 14]. To put it simply, the critical mass is the minimum point a network and a system has to reach for rapid development[4]. In addition, Lim [4] indicated that online group buying requires collaborative participation from consumers to purchase the product with a discount price. Therefore, using the concept of critical mass as the base of collaborative event can explain what constitute the impact on consumers' online group shopping behavior.

Previous scholars have mentioned that the critical mass is important to the continuity of creativity. A new invention is likely to be eliminated if it cannot reach a threshold of critical mass[14-16]. When a new invention is introduced to the public, because of the fewer users, the invention has slower speed of expansion, and has limited value[14]. However, when most users realize the benefits of the invention, more people will follow, contributing to a higher value of the invention[14]. As the result, when the expansion reaches a significant point and the invention garners a sufficient number of users, the critical mass is achieved[14, 17]. It will make the newly invented technology become more popular and have more users[14, 17]. When the FPGB operator initiates a group buying to purchase a product, members would first have some doubt toward the product. Therefore, members would rely on the product information posted by the operator and their trust on the operator to further understand the product. When these members are successfully persuaded to believe in the value of the product, the purchase value of the product will continue to expand. The product will then reach the members' perception of the critical mass. In addition, previous studies have shown that the critical mass of online shopping can lead consumers to believe that most people shop on the digital market[4]. The critical mass can thus effectively attract more participants to join in online activities[18, 19]. In a FPGB setting, the operator at first can only attract a few members to purchase the product. However, when more and more members read the product information

posted by the operator and the positively interactive message written by other members, they may infer that the operator are trusted by many other members, think that information in fan page are useful, as well as believe that the products recommended by the operator can attract a lot of members to follow and purchase. More specificity, members' perception of critical mass would be boosted by the reading of the information generated by itself and by the observing of other members perception of the fan page's operator, as well as their perception of information usefulness, which in turn, enhance their willingness toward participating in the group buying. This study therefore proposes the following hypotheses:

H4: The higher information quality of posts on FPGB the members perceived, the higher perception of critical mass they would have.

H5: The higher perception of source credibility of an FPGB operator the members perceived, the higher perception of critical mass they would have.

H6: The higher perception of information usefulness on FPGB the members perceived, the higher perception of critical mass they would have.

H7: The higher perception of critical mass on FPGB the members perceived, the higher willingness toward participating in the group buying they would have.

RESEARCH METHOD

Research Method and Instrument Development

This study was conducted by a survey method. All items used in this research were adopted from prior studies, which have been tested and used to ensure their validity and reliability. Moreover, to fit in our research situation, we did a little modification of these items. All the questionnaire items were measured by a seven-point Likert-type scale, ranging from (1) strongly disagree to (7) strongly agree. The operational definition of each construct is shown in Table 1.

Table 1: Operational Definition

| Construct | Operational Definition | Reference |
|------------------------|--|---------------------------------|
| Information Quality | The degree to which fans believe the product information provided by the fan page operator is comprehensive and precise. | Sussman and Siegal [5] |
| Source Credibility | The degree to which fans believe the operator of the fan page is trustworthy, reliable, and have sufficient experiences and knowledge of the group buying product. | Sussman and Siegal [5] |
| Information Usefulness | The degree to which fans believe the information posted on the fan page has value and is beneficial to them. | Sussman and Siegal [5] |
| Critical Mass | The degree to which fans believe other fans of the fan page are willing to continue participating in group buying on the page. | Slyke et al. [14] |
| Purchasing Intention | The possibility in which fans believe they will participate in a group buying on the fan page within the next three months. | Kim, Chan, and Kankanhalli [20] |

Data Collection and Analysis

The questionnaire of this study was created via an online platform: MySurvey (<http://www.mysurvey.tw/>) and was distributed via Facebook by using the functions of newsfeed and message sending. We targeted research sample on

Facebook users who have the experience in participated in a group buying on FPGBs. After two weeks, 212 questionnaires were collected. After deleting 5 invalid cases, 207 valid samples was obtained. Among these valid data, 50.7% are male and 49.3% are female. Their age mostly range from 19 to 22 (49.3%). 71% of them have a college degree. Most of them are students (72.5%). Moreover, they have followed 1 to 3 fan pages and visit the pages 1-3 times weekly. The types of fan pages they visited more often are related to gourmet (55.6%) and daily necessities (43%).

Instrument Reliability and Validity

This study adopted the Composite Reliability (CR) value to evaluate the validity of the instrument and its internal consistency. Table 2 shows that the CR value of each construct is greater than 0.9, which higher than the requirement of 0.7[21]. In addition, the Average Variance Extracted (AVE) value of each construct is higher than 0.7, which surpasses the required value of 0.5[21]. The above results demonstrated that the instrument used in this study meets the requirement of convergent validity. Moreover, this study compares the root square of the AVE of each construct and the correlation coefficient between each construct to examine the discriminant validity of our instrument. In Table 2, the root square of AVE is displayed in bold font. They are all greater than the correlation coefficient between each construct. This proves that the instrument used in this study meets the requirement of discriminant validity[21].

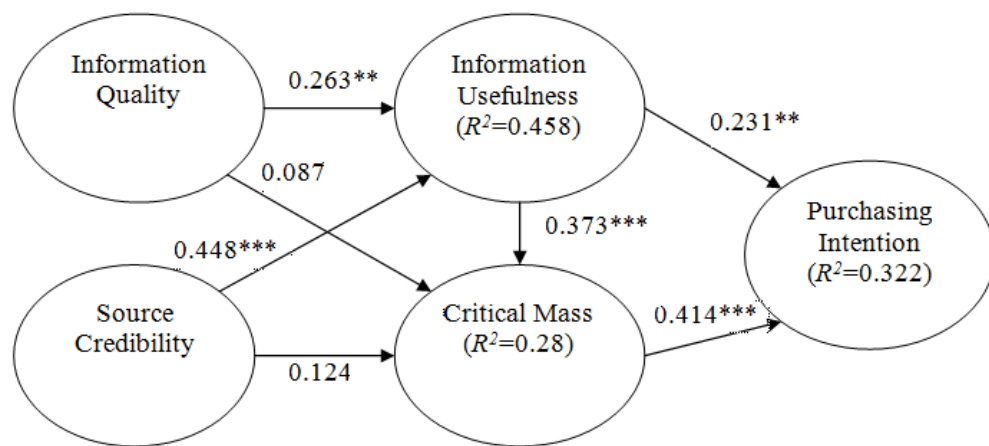
Table 2: Mean, Standard Deviation(SD), Correlation Coefficient, AVE, and CR of the Construct against Square Root of AVE

| Construct | Mean | SD | AVE | CR | (1) | (2) | (3) | (4) | (5) |
|------------------------|-------|-------|-------|-------|--------------|--------------|--------------|--------------|--------------|
| Source Credibility | 4.793 | 1.116 | 0.713 | 0.909 | 0.844 | | | | |
| Information Quality | 4.743 | 1.066 | 0.835 | 0.938 | 0.800 | 0.914 | | | |
| Information Usefulness | 5.123 | 0.977 | 0.773 | 0.911 | 0.658 | 0.622 | 0.879 | | |
| Critical Mass | 4.960 | 1.009 | 0.822 | 0.932 | 0.439 | 0.418 | 0.508 | 0.907 | |
| Purchasing Intention | 4.333 | 1.252 | 0.954 | 0.984 | 0.440 | 0.455 | 0.441 | 0.532 | 0.977 |

MODEL TEST

The structural model was tested by using Smart PLS 2.0(<http://www.smartpls.de>). Figure 2 shows the model test result. Overall, except for H4 and H5, all hypotheses were supported. The results showed that information quality ($\beta=0.263, p<0.01$) and source credibility ($\beta=0.448, p<0.001$) significantly influence FPGB members perception of information usefulness ($R^2=0.458$), therefore, H1 and H2 were supported.

Moreover, FPGB members perception of information usefulness ($\beta=0.373, p<0.001$) was positively related to their perception of critical mass, which explained 28% of total variance, the H6 was thus supported. Finally, FPGB members willingness toward participating in the group buying ($R^2=0.322$) was influenced by the perception of information usefulness ($\beta=0.231, p<0.01$) and the perception of critical mass ($\beta=0.414, p<0.001$), thus, the H3 and H7 were also supported.



p<0.01, * p<0.001

Figure 2: Model Test Result

DISCUSSIONS AND CONCLUSIONS

Discussions

This study finally provides the following discussions based on our research results:

The Determinants of Information Usefulness of FPGB Members

The research results showed that the information quality of the posted information and the trustworthiness of fan page operator were proven as two important factors that determine members' perception of information usefulness. Notably, the influence of the source credibility is reach to 0.448. This reveled that compared to the quality of posts, members think that the fan page operators' knowledge about the product and their experiences in using the product is more vital for them to evaluate the usefulness of information they received on fan page. This means that operators of FPGBs can share their real experiences of using the product and their knowledge about the product to earn and accumulate members' trust on them. They can thus enhance members' perception of the usefulness of the information published on the fan pages. The result also revealed that the quality of information posted on the FPGBs has significant impact on members' perception of information usefulness. Therefore, FPGBs' operators should pay attention to how to present the experiences of using the product in a precise and comprehensive manner to users so that to strengthen members' perception of the usefulness of product information introduced on FPGBs.

The Determinants of Perceived Critical Mass of FPGB Members

This study finds that although the correlation coefficient between the information quality of the post as well as the source credibility and the perception of critical mass is respectively reach to 0.439 and 0.418, both are lower than the correlation coefficient between the information usefulness and the perceived critical mass, which is 0.508. This means that although there is a significant relationship between the information quality as well as the source credibility and the critical mass, respectively, the model test result demonstrates that the perception of the information usefulness has a greater impact on FPGB members' perception of critical mass. This is probably because fans of the FPGBs have been following the pages for a long time, they have accumulated a certain amount of understanding of the operator, and their willingness toward the group buying are less likely to be affected by the posted product information and the trust on the operators. Instead, they believe the information published on the pages is helpful and motivate their willingness to participate in the group

buying initiated on the FPGB.

The Determinants of Member's Intention to Participate in a FPGB

This study results showed that both the perception of information usefulness and critical mass can help enhance FPGB members' intention to participate in the group buying. Specifically, the impact of perception of critical mass is reach to 0.414. Clearly, comparing to the information usefulness, the number of participants of group buying is the main reason that facilitates fans' willingness to participate in the group buying on FPGB.

Practical Implications

According to our research findings, this study provides the following suggestions as references for FPGB operators and service providers.

FPBG Operators should Pay Attention to enhance the Information Quality of Posts and Increase Members' Trust on them.

This study found that members' perception of information usefulness is positively related to their intention toward participating in group buying on FPBG. Therefore, this study suggests that FPGB operators should offer valuable product information to fans through providing and sharing their knowledge and using experiences about products precisely and comprehensively on fan pages, which in turn, promote fans willingness toward joining in a group buying.

FPBG Operators should Create the Atmosphere of Critical Mass on their FPGB to Enhance Members' Intention toward a Group Buying

This study finds that the critical mass is also an important factor that motives members to participate in a group buying on FPGB. Therefore, this study suggests FPGB operators should show their friendliness and actively interact with members of the pages. They should let members know them and trust them because this interaction can raise the members' intention of participating in a group buying. When other members perceive there are a considerable number of participants, they are more likely to participate in the group buying on FPGB, too.

Suggestion for FPGB service Providers

Finally, because our research findings revealed the importance of the impact of critical mass on FPGB members' intention, this study recommends that the service providers of FPGBs can show the latest number of participants of each group buying event on the page to increase members' perception of critical mass. This is beneficial to attract members' notice and awareness about the amount of buyers of a specific group buying event, which motivate and encourage more members to participate in the group buying on FPGB.

ACKNOWLEDGEMENTS

This research was supported by the National Science Council of Taiwan, Republic of China, under grant MOSTMOST 103-2410-H-324 -005 -

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